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# State of Utah

## DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER  
Executive Director

### Division of Oil, Gas and Mining

JOHN R. BAZA  
Division Director

April 26, 2013

John Wagner  
Materion Natural Resources Company  
P. O. Box 815  
Delta, Utah 84624

Subject: First Review of Amended Notice of Intention to Commence Large Mining Operations, Topaz Mine, M/023/0003, Juab County, Utah

Dear Mr. Wagner:

The Division of Oil, Gas and Mining has completed a review of the referenced amended Notice of Intention to Commence Large Mining Operations (Notice) which was received February 13, 2013. The attached comments will need to be addressed before Division approves the amendment.

The comments are listed under the applicable Minerals Rule heading. Please address only those items requested in the attached technical review by submitting replacement pages for the Notice using redline and strikeout text. When the Notice is determined technically complete, the Division will ask for two clean copies of the complete and corrected plan. Upon final approval, one copy, stamped approved, will be returned to you.

The Division will suspend further review of the Notice until your response to this letter is received. Please contact the appropriate reviewer with questions about the review (Wayne Western, whw, 801-538-5263; Peter Brinton, pnb, 801-538-5258; or me, pbb, 801-538-5261). We would also be glad to meet with you or your consultants to resolve concerns or questions. Thank you for your cooperation.

Sincerely,

Paul B. Baker  
Minerals Program Manager

PBB: whw: eb  
Attachment: Review  
P:\GROUPS\MINERALS\WP\M023-Juab\M0230003-Topaz-brush\final\REV1-5313-03192013.doc



**First REVIEW OF NOTICE OF INTENTION  
TO COMMENCE LARGE MINING OPERATIONS**

**Materion Natural Resources Company  
Topaz Mine**

**M/023/0003  
April 24, 2013**

**R647-4-105 - Maps, Drawings & Photographs**

**General Map Comments**

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
1	Table 2.2-2	Please include a general permit area boundary map that shows all the permitted areas including the pipeline and pump house. The Division needs a map or set of maps that shows the entire permit area. In addition also please update all tables the show permitted acreages to include the waterline and pump house.	whw	
2	Table 2.2-1	Please include a map showing surface ownership (R647-4-105 1.11) and cross reference this map with Table 2.2-1.	whw	
3		The water well and associated pipeline need to be shown on one of the maps, such as Plate 2.	Whw and pnb	
4		R647-4-105 1.12 states that there should be a map that shows perennial streams, springs, roads, buildings, landing strips, and many other surface facilities within 500 feet of the permit area. Please either include all those features on one map or address those items in the text. Please show those roads which are Juab County roads that existed prior to mining and will not be reclaimed.	whw	
5	Plate 12	Please show on Plate 12 and reference in the text those areas for which partial bond release was granted and when. This is needed so that everyone knows what areas have full bond release and which areas have partial bond release.	whw	
6	Plate 4A Plate 4B	Include unidentified mining features, such as the pits and dumps in the Sigma and Blue Chalk areas.	pnb	

**105.1 - Topographic base map, boundaries, pre-act disturbance**

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
7	Plates 4A and 4B	Please show topsoil storage areas on Plates 4A and 4B.	whw	
8	Sec. 6.9	Please show on one of the maps any areas that were previously disturbed by mining and not reclaimed, or include a statement in the text that no such areas exist.	whw	

**105.2 - Surface facilities map**



Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
9		R647-4-105 2, please include a map at a scale of 1 inch equals 200 feet of the surface facilities area (mine camp and the contractor's camp). The information on the map should be cross referenced with the text (Section 4.6) and in the bond calculations.	whw	

### 105.3 - Drawings or Cross Sections (slopes, roads, pads, etc.)

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
10		Please include a map showing reclaimed slopes steeper than 2H:1V. (R647-4-105 3.11)	whw	
11		Please include a map showing the location of solid rock slopes and other structures that will be left on site after reclamation. (R647-4-105 3.14)	whw	
12		Please provide a typical cross section for the roads that will be left as part of the postmining land use.	whw	
13		Please provide cross sections of the pit slopes that will be left with slopes steeper than 45 degrees.	whw	
14		Please provide cross sections of the waste dumps that will have slopes steeper than 45 degrees.	whw	
15	Plate 2, Hydrology	Include the well locations from Plate 5A and 5B on the hydrology map (Logical Mining Unit Development maps).	pnb	
16	Plate 2, Hydrology	If they are already available, extend the stream locations onto all of the topography shown and provide dashed lines to indicate ephemeral streams.	pnb	
17	Plate 2, Hydrology	Identify the location of ponding in the pits, as shown on Plate 5 maps.	pnb	
18	Plate 2, Hydrology	Identify and show the locations of the outfalls and the paths of any existing or projected overflows bypassing the dumps.	pnb	
19	Plate 2, Hydrology	Identify the location of any water control structures (culverts, pipes, and any significant ditches and berms).	pnb	
20	Plate 2, Hydrology	Show the complete ephemeral drainage areas northeast of the Blue Chalk area that report to the same impoundment location behind the Phase 3 Blue Chalk dump.	pnb	
21	Plate 2, Hydrology	The surface hydrology of Phase 2 will be significantly different from that of Phase 3. The hydrology map represents post-Phase 3 reclamation hydrology. A hydrology map showing Phase 2 hydrology should be provided.	pnb	
22	Plate 2, Hydrology	The boundary for the watershed identified as SO-1 is not closed. Correct the boundary and any related boundaries that might be affected.	pnb	
23	Plate 6D	The map has locations identified by number, but the photographs do not have corresponding numbers. Please number the photographs.	pnb	

### R647-4-106 - Operation Plan

#### General Operation Comments

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
24	Section 3.5, p. 11	Provide a source for the stated annual evapotranspiration rate of about 77 inches.	pnb	
25	Section 4.8	Please provide peak flow calculations and areas of the watersheds that have been or are proposed to be blocked by, or that are proposed to be diverted around, waste dumps through the end of Phase 2 mining. State any assumptions made in the calculations. Contact the Division for more information.	pnb	



Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
26	Section 4.8	Please provide actual and design retention capacities for the current and proposed stormwater impoundments through the end of Phase 2 mining.	pnb	
27	Section 4.8, p. 30	Please provide a copy of the best practices section from the current Storm Water Pollution Prevention Plan as an appendix to the Notice, and reference it on page 30.	pnb	
28	Section 4.8, p. 30	Plate 2 indicates that a well-developed drainage channel fed by two watershed areas northeast of Blue Chalk area is to be blocked with dumps as part of Phase 3 plans. Peak flow calculations and the impoundment capacity for this area and other areas affected by Phase 3 modifications will be required prior to Phase 3 approval.	pnb	

#### **106.8 - Depth to groundwater, extent of overburden, geology**

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
29	Section 3.6, Page 13	Report the measured depths to groundwater in the wells in the Fish Springs Flat (in Section 5 and Section 31) near the active and future mine sites, and refer to Appendix 3.	pnb	
30	Section 3.6, Page 13	The statement that low concentrations of solutes are present in MWMP leachate from rhyolite material does not adequately summarize the results of the 1993 JBR study, since tuff and ore were also tested, and since a few solutes (most notably fluoride) in leachate from multiple rock types exceed MCL standards for drinking water. Some additional explanation is needed.	pnb	
31	Section 3.6, Page 13	Indicate which document is referred to as being present in Appendix 3.	pnb	

#### **R647-4-109 - Impact Assessment**

##### **109.1 - Impacts to surface & groundwater systems**

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
32	Section 6.5, page 53	Please provide a brief explanation of why relatively-high MWMP leachate solutes will not impact groundwater.	pnb	
33	Section 6.5, page 53	Considering the effects of high evaporation on pit water quality, do pit water samples suggest concentration of solutes due to evaporation? The sample data has not been included in Appendix 3.	pnb	
34	Section 6.5, page 53	With the proposed removal of the repeated information already included in 3.6 (page 13), this section alone does not adequately discuss impacts to groundwater. Summarize the conclusions of the 1999 study here.	pnb	
35	Section 6.5, page 53	A copy of the DWQ determination of permit by rule should be provided in an appendix, and should be referred to in this section.	pnb	
36	Appendix 3	Please insert meaningful data from Appendices I through IV from the Feb 3, 1999, report by JBR that evaluated potential impacts to groundwater, and summarize any pertinent and justifiable conclusions associated with Appendix 3.	pnb	

#### **R647-4-110 - Reclamation Plan**

##### **110.3 - Description of facilities to be left (post mining use)**

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
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Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
37		Please show the roads that are currently scheduled to be retained as part of the postmining land use. R647-4.105 3.12	pbb	

#### **R647-4-112 - Variance**

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
38		The specific rules should be identified for which variances are granted and proposed to continue.	pnb	
39		Please include a commitment to submit an update to Appendix 5 (Slopes of Existing Open Pit Highwalls) with the annual report. In addition, include a commitment that any slope failures on slopes greater than 45 degrees will be reported to the Division within 10 days.	whw	
40		In the confidential Appendix 9 that deals with slope stability there are several specific design recommendations. Please include a commitment to follow these recommendations. The Division recommends including the design standards in the NOI if it the information is not confidential.	whw.	

#### **R647-4-113 – Surety**

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
41		Please include a line item for the plugging the water well and reclaiming the pipeline. In addition any surface work that might be required to reclaim those structures.	whw	
42		Please include as line items those areas for which partial bond release has been granted.	whw	
43		Include the removal cost for any culvert or other water control structures (berms, etc) as line items.	pnb	